Survivability Catalog

Comprehensive Proven Survivability Solutions

Elbit Systems™ Land

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Elbit Systems has earned an outstanding global reputation for innovation and reliability, its name synonymous with excellence in solutions for the demanding challenges of the modern and future battlespace. With the acquisition of IMI, Elbit Systems offers full-spectrum armored solutions for tanks, Armored Personnel Carriers (APCs), Armored Fighting Vehicle (AFVs) and other armored vehicles, providing optimized battlefield coverage with high-performance ballistic and armor protection solutions for improved safety and survivability of the crew and deployed troops.

Elbit Systems Land's armored solutions and protection kits support operational scenarios at various levels of protection, for heavy and light armored vehicles, offering reactive protection, passive protection for urban warfare and APCs, hybrid protection (passive and reactive) and protection against IEDs and mines.

Almost all the IDF combat-proven armor MBT/AFV protection kits come from Elbit Systems, as prime contractor. The activity for the IDF projects is controlled and coordinated by the Israeli Ministry of Defense (IMoD). Elbit Systems' extensive accumulated experience and close contact with the IDF Armored Corps enables us to provide "soldier-proof" solutions for any user.

Elbit Systems Land offers additional after-sales support and systems logistic packages, comprehensive spare parts management and training and instruction tailored to customer needs.

Armor Protection Systems

Main Battle Tanks and Heavy AFVs

Elbit Systems Land offers combat-proven armor protection kits for MBTs and heavy AFVs, based on advanced passive, reactive (ERA), hybrid, and Active Protection System (APS) technologies. Ballistic solutions are based on advanced designs and simulation tools to provide weight-optimized applications with high coverage, together with the highest level of safety features.

All fielded armor kits are ballistics and environmental-qualified before entering serial production, under the harshest vehicle and combat environments. Protection kits developed and manufactured for the IDF include the Merkava MBTs, the Merkava-based Namer heavy AFV, as well as tailor-made solutions for tanks in combat and low-intensity operations and up-armoring kits.

These combat proven solutions are also implemented for several international customers (such as the M60T and T54B up-armoring projects).

Light Vehicle Armor System (LVAS)

Hybrid add-on armor for APCs

The light vehicle armor system (LVAS) is based on modules that are easily replaceable in the field, providing low weight protection against multiple threats: RPG-7 warheads (perpendicular hits), IED and artillery fragments, 7.62mm and 14.5mm AP bullets. With optimal explosive and metallic contents, the add-on hybrid (passive and reactive) modular armor system is a reliable and safe solution for APCs crew and deployed troops.

Installation and maintenance: The LVAS enables easy and convenient access for engine maintenance. The low-weight solution requires only minor automotive modifications and is safe to handle and store when not in use. The LVAS can be installed on tracked or wheeled APCs.

Optional systems: The LVAS offers additional systems such as air-conditioning, steering wheel, energy absorbing seats and an automatic fire extinguishing system. Optional high-performance protection systems include a Remote Control Weapon System (RCWS) and an optimized Active Protection System (APS) - Elbit Systems' Iron Fist Light Configuration, to respond to threats and increase survivability of the vehicle.

Urban Fighter

Up-armored M113 for urban warfare

The Urban Fighter suite for M113 provides all-round visibility, advanced firing capabilities and high-level passive armor protection against IEDs, RPG (SLAT), and 14.5mm AP bullets. The vehicle can carry nine fighters with full combat gear.

Improved combat capability and survivability: With add-on armor protection, the Urban Fighter solution delivers improved survivability and maneuverability in urban combat scenarios. Driver and crew are protected with front and side ballistic windows for the driver, with additional ballistic side windows in the crew compartment. The fighting compartment features a two-person copula, and includes additional firing ports. The add-on armor protection can be installed on other tracked or APCs. The improved protection solution is type-qualified and fielded by the IDF.

Optional systems: The Urban Fighter offers additional systems such as air-conditioning, steering wheel, energy absorbing seats and an automatic fire extinguishing system. Optional high-performance protection systems include a RCWS a situational awareness system, and an optimized APS – Elbit Systems' Iron Fist Light Configuration, to respond to threats and increase survivability.

TOGA

Passive add-on armor for APCs

TOGA is an add-on armored solution composed of specially perforated steel plates. The cost-effective solution offers low-weight protection for APCs against AP bullets, and artillery and shell fragments. The add-on armor provides high-level ballistic protection (350% efficiency) by deflecting the bullets' trajectory and protects against RPGs by reducing the dispersion. TOGA is type-qualified and fielded by the IDF and other forces worldwide.

Easy integration and maintenance: TOGA is integrated to the chassis of the APC with simple attachment brackets and enables easy access for engine and transmission maintenance. Storage space behind the armor can be installed if required.

Optional systems: TOGA offers additional systems such as air-conditioning, steering wheel, energy absorbing seats, a flotation kit and an automatic fire extinguishing system. Optional high-performance protection systems include a RCWS, a situational awareness system, and an optimized APS - Elbit Systems' Iron Fist Light Configuration, to respond to threats and increase survivability of the vehicle.

Breakwater

Advanced hybrid protection against IEDs-EFP and RPG-7

The Breakwater hybrid protection system is based on passive and active armor technologies, designed to minimize the risk of injuring dismounted troops and of collateral damage to non-combatants. The complete armor solution provides a high level of protection against IEDs explosively formed penetrators (EFP) and RPG-7 anti-tank warheads. The shape is optimized to achieve the ideal balance of performance to protect against EFPs and RPGs.

Proven high protection: The advanced protection system is comprised of a proprietary configuration of metals, composite materials and explosives. The solution has undergone extensive testing against large EFPs manufactured with copper liners and RPG-7 warheads, and can also defeat RKG-3 shaped-charge grenades. The armor solution has repeatedly demonstrated its high protection level in the ability to defeat surrogate IED-EFP on Mine Resistant Ambush Protected (MRAP)-like base armor. The hybrid protection module conforms to STANAG 4569 standardts.

Survivability testing: The secondary effect caused by the add-on reactive armor modules responding to an imminent threat is minor compared to the blast and fragmentation resulting from the ammunition itself.

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Iron Wall

Passive protection against medium IEDs

Iron Wall is a combat-proven innovative passive ballistic structure capable of defeating medium IED threats, such as explosive flyer plates EFPs and steel-ball charge focus fragments SFFs. The solution provides passive add-on armor comprising a combination of composites and metals. The protection system is compatible with medium and light platforms (tracked or wheeled APCs).

Proven high protection: Iron Wall has completed operational trials by the IDF on the Urban Fighter M113, as well as successful tests on thin wall RHA steel (Stryker/LAV III-like) and thicker aluminum base armor (M113-like). The armor protection system conforms to STANAG 4569 standards.

Light Armor Protection

The experience gained with heavy main battle tank (MBT) armor protection has been leveraged and implemented on several lighter platforms. Protection kits developed for the IDF and other customers include systems for the M113 APC and wheeled platforms, such as the CombatGuard, and a tailor-made solution for ICV (8x8 Infantry Carrying Vehicle).

Lightweight solutions for superior protection: The light armor protection solutions are composed of hybrid and lightweight composite and ceramic materials, designed to withstand multi-hit impact while maintaining automotive performance and mission capabilities. The light armor protection systems meet STANAG 4569 standards.

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